

ARSON

Arson evidence consists of three types of samples collected during the investigation of a fire of suspicious origin. These sample types are important to the investigator and the laboratory in the analysis, interpretation, and adjudication of a case.

A. A question sample includes materials suspected of containing a liquid accelerant. Typical examples include, but may not be limited to, burned substrate regions at a fire scene containing unusual or suspected char patterns, a suspect's clothing and shoes, and liquids located at the fire scene that are suspected of being an accelerant.

B. A comparison standard consists of a pure sample of the liquid accelerant believed to have been used to ignite or accelerate a fire. The standard sample comes from a known, documented source. Typical examples of a standard sample include: 1) an unopened container of the accelerant product purchased through a supply or retail store, or 2) samples obtained at the service station where the product is suspected of originating from.

C. A comparison control consists of a sample of the site substrate that does not contain the liquid accelerant. Collecting these samples allows the arson analyst to observe the characteristics of the substrate and make a more informative conclusion based on this data. Ideally, the control sample would be burned to the same extent as any question sample. If a burned comparison control is not available, collect a non-burned portion of the typical material. If needed, the laboratory will burn the sample as part of its work-up.

D. Collection and packaging of samples: Collect samples using uncontaminated utensils. Care must be exercised to prevent cross-contaminating samples. Collection tools (shovels, knives, gloves, pipets, etc.) should be cleaned or disposed of between samples. Packaging supplies may be obtained from packaging, evidence, or laboratory supply companies.

1. Packaging of debris samples and a suspect's clothing or shoes:
 - ii. Samples must be collected in friction lid cans. Ensure that cans are unused and unlined. Laboratory analysis trapping techniques require an air space in any sample container, so do not fill cans more than $\frac{3}{4}$ -full. Size of the can should be proportional to the size of the sample. Affix arson evidence label and place an evidence tape and any identifying marks on such.
 - ii. Kapak (polyester) bags are to be used **only** for objects which will not fit into a friction lid can. Seal the bag with a heat sealer immediately following collection, and place evidence tape and identifying marks along this heat seal. Place an arson evidence label on the bag.
 - iii. Friction lid cans and Kapak bags are the only packaging containers approved by our laboratory.

2. Packaging for liquid samples:
 - i. Liquid **question** samples that appear to be solely a petroleum product and liquid **comparison standard** samples should be placed in a 2ml screw-top vial using a disposable pipet. Fill the vial and tape the lid to prevent loosening. Place vial into a friction lid can filled with an absorbent material such as cat litter or vermiculite. Affix an arson evidence label and place evidence tape/initials on the can's seal. **Never ship the entire can or bottle of a petroleum product to the laboratory. Doing so violates DOT shipping requirements.**
 - ii. Liquid question samples that appear to contain only a trace of a petroleum product will require judgement as to how much sample should be collected. **Remember** that the sample container should be larger than any liquid collected to allow for expansion. Federal shipping regulations limit that amount of any petroleum product that can be transported without special handling procedures. For further information refer to BFS document, *Physical Evidence Collection for Arson Investigators*, or contact the Pocatello laboratory.

C. Information to include when submitting cases:

1. A cover letter.
2. Fire scene sketches.
3. Incident report.

D. Submission of arson evidence:

1. Submit arson evidence to the Pocatello laboratory, as this is the only laboratory analyzing such material at this time.
2. When shipping, use UPS and specify that a signature is required upon delivery.